

NASA ADMINISTRATOR
JAMES M. BEGGS
AT LEWIS RESEARCH CENTER, OHIO
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Introduced by
Center Director Andrew J. Stofan

STOFAN: I talked with Jim quite a bit ahead of time about what my charge was in coming out here and that was to turn the Center around and build again, both with people and with programs. And Jim asked me to do it and said he would support me. He has given me 100% support this last year and I think it's really great to be working with someone from Washington - honest, trustworthy - and lived up to every one of his words. (applause)

Again, it is my pleasure to introduce the Administrator of NASA to you who again will give us, I'm sure, a soul-stirring speech about the future of this agency and where we're going. I think that Jim in the short time he's been back with NASA again has done wonders. He has extremely good relationships with the White House, and that hasn't happened since the time of Webb. I think that foretells a good future for the agency. The other thing he's doing which I think is really exciting is he has a real concern about the long-range plans of this agency and where we're going in the future and he's concerned about the long-range outlook and I think that's very good and spells good for the future of NASA and good for the future of Lewis. And with that, I introduce Jim Beggs. (applause)

BEGGS: Thank you very much, Andy. I'll try to live up to that introduction. As Shakespeare once wrote, "Past and to come seems best, things present worst." And maybe that has been true although I don't believe it's true right now of NASA. As we all know, this is our 25'th anniversary year. Hardly seems possible that we could be 25 years old, but we are. Of course, we go back a long time before that here at Lewis, as well as some of the other centers of NASA. But in 25 years we've done some pretty amazing things, surpassed does seem best in many respects, but I think these will pale into insignificance compared to what the future holds. We've only just begun. I think this past week exemplifies the transition we're going through and gives us an insight, just a small insight, in what may be coming.

The past week was truly a very pleasant and very, very significant one for NASA and for the country. Last Sunday, Sunday a week, we brought the Enterprise back to Washington on the Shuttle Carrier Aircraft and we brought tens of thousands of Americans up to look at it, not to mention the fact that on our way we made a trip around Baltimore and as you also know, we made a trip around New York, and went out to St. Lois, and we've attracted probably a million people who've come out to see that and given the American people a chance to take a look at what they bought and paid for, at least mostly bought and paid for.

The Shuttle Enterprise went to Europe, as we all know, and it was a truly emotional experience over there. We went to Bonn,

in Germany, and turned out 350,000 people in what was a very bad two days from the weather point of view, it rained most of the two days but nevertheless, 350,000 Germans came out to look at it. Then on to Paris where the Paris Air Show drew the largest attendance, public attendance, that it's ever drawn, and not by a little bit but by a couple hundred thousand, which indicates the intense interest of the world because there were people from all over the world in Paris for that show. In our programs and we had an opportunity in the exhibit to show the world all of our programs, and it was interesting to me to go into that exhibit from time to time and listen to the comments. It was crowded almost constantly and the comments were almost 100% favorable. And since that show affords us the opportunity of comparing ourselves to our chief rivals, and we have several of them these days - the Soviets, and the European Space Agency, and the Japanese and others who are now in the business of space - it was a very important and very significant happening. We flew down to Rome and got a couple hundred thousand people out and then on our way home we stopped north of London and the English turned out their schools and there were a half a million people who came out to look at the Shuttle in England. And then back to Ottawa, Canada where the Canadians turned out very well and then on to Washington.

So, Sunday started the week in a very auspicious fashion. On Monday, of course, Pioneer 10, which has been on its way for

11 years, finally crossed the orbit of Neptune and sailed out of the solar system on to the heliopause, and on to making history in the interstellar regime; and we had a good celebration for that and got front page articles on nearly every paper across the country, every major paper, certainly. The New York Times had it on the front page, the Los Angeles Times had it on the front page, as did the Washington Post. It was a remarkable kind of achievement because you wouldn't of expected that much public attention to a space craft that really was not all that interesting to the public when it took off 11 years ago. And as you all know, we have three satellites for space craft comming along behind that, the two Voyagers and Pioneer 11, and they, too, I think will get a lot of attention when they finally sail out of the solar system as they surely will one day in the next ten years.

Then on Wednesday, we went up to Baltimore, The Johns Hopkins University, and dedicated the Space Telescope, the large Space Telescope Science Institute, which as you know, will be the repository of all the information that we get back from the large Space Telescope, which will be a truly awesome achievement of its own. As we all know, we have a few problems here and there on the Space Telescope, but I think we're on our way to solving them. And when we launch it in '86, we will have the, by far, the best astronomical observatory that NASA has ever put in orbit and significantly better than anything we have here on Earth. Seven times, peering seven times further with ten times the

clarity and viewing objects 50 times fainter are numbers that are truly awe inspiring. And the program from a technical point of view, looks like it will achieve that kind of performance.

And then, of course, on Saturday, we launched the Challenger once again, as we say down in Kennedy, almost on time, it was 2 milliseconds late. And there were just a whole host of firsts in this flight which are very significant, both to the agency and to the country in demonstrating the capability of our system. Of course, it is the first time we've flown a crew of five on board. It's the first time we've put an individual astronaut that's flown twice on the shuttle system, that's the Commander, Bob Crippen. And, of course, the first time an American woman astronaut has gone along as a crew member, and a very important crew member, because now as the Shuttle starts to move towards maturity, the emphasis will now go on the Mission Specialist and away from the Pilot and the Commander of that machine. What we're doing is more important than how we do it, and we will do some very, very interesting things. As you know, the two satellites that we will be carrying for pay are already out of the Shuttle Bay and on into the proper orbit, they were very successful. We are now onto the science experiments and we have a number on board that will be first in their own right. Of course, the target satellite that the Germans gave to us this time, Spas One, will be sent out into space tomorrow and then recovered about nine hours later and that will be a truly unique event and one that we've been looking forward to because it

demonstrates our capability to retrieve and bring back into the Shuttle Bay, hopefully, for repair operations in the future, and this will allow us to extend the life of our experimental and operational satellites in space; that's very, very, important.

And of course, we're having a splendid series of events going on almost every day. We're getting a lot of television pictures back which go on television and go in the newspapers and everyplace. And that helps the Program, believe me. When we're flying, people pay attention to us.

I thought I might just talk for a little while here about what the future holds in the near term and then speculate on what it might hold in the far, distant future because I think that now the interest is returning to the Program and we have every reason to believe that the public will maintain an interest in this because this represents the cutting edge of high technology and high technology is becoming more and more important to this country. It is recognized now as never before, that the competitive edge of this country depends upon our ability to keep moving ahead in technology. The areas in which we compete the most effectively in the world are high technology industries and we have learned that if we let down our guard in any industrial area, we are soon overtaken and our competitive posture deteriorates very rapidly.

With each of our Shuttle launches, we demonstrate more and more capability and space now becomes a place where we can pursue

scientific research routinely, we can use space for commerce and industry, we can strengthen our national security, and yes, indeed, we even have a lot of fun. And more optimistic as to the future. The past few years have also witnessed a return to the interest in this Program in aeronautics, and that I know is very important to this center. The Aeronautics Program is now solidly based, it's getting more money each year, and we hope to continue that advance, both in money and in program. And that will mean more for you to do as well as will mean more to the American industry. We've had some large achievements in that program. The Aeronautics Program, as we all know, serves both our civil and military program and is exceedingly important for both those programs. It was interesting when the program was under attack, to see how quickly the industry rallied to our support and they did. In Tilt Rotor Program we now have a program which has the interest of the military and moving ahead with a prototype military vehicle; and I think that's extraordinarily important. We also have a lot of interest in the industry in the work that you have been doing out here in going back or in moving forward, I should say, back to a technique once used, now improved, of turbo props. And I think you'll see those aircraft flying in the civil field in the not too distant future. And our R&D Program, the R&D base program, is expanding. Not only in aeronautics, but in the space R&D, and that's encouraging.

With the Shuttle we're beginning to see some real commercial potential. I use this example many times, of the electrophoresis

experiments that McDonald-Douglas and Johnson & Johnson have been conducting. We're flying at this time again, this is for the third time, and each time they become more optimistic as to the commercial potential. This time they will be separating some quantities of a commercial pharmaceutical material and if it works, then we are one step closer to commercial realization. And nothing can be more important to this program than a commercial fallout. It's very, very significant. We have expanded our constituency enormously in the past 25 years because of the things that came out of the program and contributed in a very real way to the material well being of the United States, starting with the communications satellite industry, which is now one of the fastest growing industries in the world, through such things as our meteorological satellites, the surveillance satellites, the search and rescue satellites which are now flying. It has gathered a constituency around us and that will be more important as the future progresses, the fact that there is an enormous amount of interest in the commercial community from the point of view of taking over expendable launch vehicles in a commercial way or in pursuing a commercial venture using the Shuttle or any of a host of other ways in which the private sector can get involved will mean that we get more and more support - very, very important.

The entrepreneurs in this country have always recognized potential and moved quickly to take advantage of it. The number

of companies which are now coming in to explore the possibilities is truly heartening. There are literally dozens of companies investigating the opportunities. And we have two very large venture capital organizations who are looking to invest some venture capital in opportunities connected with the Shuttle and they hope with the Space Station, assuming we move forward with the Space Station, and that is encouraging.

The flights to come this year of the Shuttle are equally important. In September of this year, on the ninth flight, we will take up Space Lab. You can't imagine the interest that that laboratory has generated in Europe. Of course, it was their project, was their contribution to the Shuttle program and not an insignificant one. It represented an investment of over a billion dollars. And they are really looking forward to this flight. Of course, we will fly a German astronaut on that flight and that is going to get coverage all over Europe because it will be the first time that they feel, will really feel that they are totally a part of the program.

It was interesting to me as we flew the Enterprise around Europe and listened to the comments of the various Europeans in the various capitals we visited. They looked on the Enterprise not as, strictly as, an American vehicle, but as part of their own culture as well, and technical achievement, and that's very important for our program as well. That international aspect of it lends a great deal of strength to the program. It came home to me in a way it never had before that they really did consider

the Shuttle to be a part of their technical achievement as well as ours.

The LANSAT program is now moving towards operational capability and has been turned over to NOAA as an operational system, performed well this past year. We've gotten truly spectacular results from the thematic mapper and while it's, while the current LANSAT is a little sick up there, we do have the DEPRAM available for launch and we're looking, talking with NOAA about launching that next year so that we will continue the continuity of that program which is very important for the various customers who are plugged into the system around the world.

All in all, it has been a truly splendid year for us. A year that I think we can look back on with a great deal of satisfaction, we've done a number of very, very worthwhile things. And we continue to have spectacular success with the new scientific satellites and experiments we're running, the IRAS, the IR astronomical observatory which was put up early this year is performing very, very well. We are learning more every day. Always, they come to the staff meeting with new things they have seen the night before almost every day. We've already learned more about our neighboring galaxy than all the previous observations throughout history, the Magelanic Cloud.

So I thank each of you and your families as well and I hope that everyone feels a part, that each of your families feels a part of the NASA team and the NASA family, can take a great deal

of satisfaction and pride in what is going on.

The third thing that we are doing is a project known as the Advanced Communications Technology Satellite, one which this like we will be through the Congress with our appropriations bill Center has quite a lot of interest in, and we do have a proposal in the early part of July, we will for the first time in some now from the industry to participate in that. The proposition time have several new starts which are encouraging, I'm sure, to that we put to the Congress is that we would try to conduct all of us. The first is the initiation of a joint program with joint program with the industry from the beginning, the flight Italy on the Tethered Satellite system which will provide a new test, the high risk technology in the 30-20 gawerson range, so capability in the shuttle for conducting experiments at distances that we could maintain the U.S. preeminence in satellite as far as 100 kilometers from the orbiter.

communications. We feel it's important, I feel it's important, The second, of course, is one we've been trying to get off that we involve the industry from the beginning so as to try to the ground for quite some time and that's the Vemis Radar Mapper shorten the development time for the introduction of that technology and we do have that solidly in the budget and the Congress has technology because other countries are moving very, very rapidly. approved it so we will get that underway in our fiscal year 84. The Japanese are coming in, for example.

Work, but that indeed is a milestone because that is the first The fourth initiative is a numerical aerodynamic simulator new planetary program that we've gotten since Galileo. Galileo which will go out at Ames and is one that we've been trying to still is doing well and if we can figure out how to get two get going for sometime to provide a base of computational fluid launches of the shuttle off almost simultaneously, we will get it dynamics and we will be buying one of Seymour Cray's newest work off to Jupiter in 1984, excuse me, in 1986. So, this one is the childs, the Cray-2, very soon as the heart of that system.

next step and we hope now to be able to sell to the OMB and to The budget will probably be in at about 7.2 billion in the Congress a series of planetary missions that may be three is not as much of an increase from '83 to '84 as we had from every ten years or so, that's our objective, so that we can get to '83, but still is a significant increase and will be a real some continuity in the program and perhaps do away with the kind increase over the '85 budget. What I'm working for and what all of ups and downs that we have experienced in the planetary agency is trying to do is get all budget back to the point where program in the past. Andy Stofan can tell you that that has been it was back in the early '70s. In those years, we were spending a problem in our planetary program for some time. about 1% of the federal budget, today, we're spending about . . .

The third thing that we got going is a project known as the Advanced Communications Technology Satellite, one which this Center has quite a lot of interest in, and we do have a proposal now from the industry to participate in that. The proposition that we put to the Congress is that we would try to conduct a joint program with the industry from the beginning, the flight test, the high risk technology in the 30-20 gahersch range, so that we could maintain the U.S. preeminence in satellite communications. We feel it's important, I feel it's important, that we involve the industry from the beginning so as to try to shorten the development time for the introduction of that new technology because other countries are moving very, very rapidly. The Japanese are comming in, for example.

The forth initiative is a numerical aerodynamic simulator which will go out at Ames and is one that we've been trying to get going for sometime to provide a base of computational fluid dynamics and we will be buying one of Seymour Cray's newest brain childs, the Cray-2, very soon as the heart of that system.

The budget will probably come in at about 7.2 billion which is not as much of an increase from '83 to '84 as we had from '82 to '83, but still is a significant increase and will be a real increase over the '83 budget. What I'm working for and what this agency is trying to do is get our budget back to the point where it was back in the early 70's. In those years, we were spending about 1% of the federal budget, today, we're spending about .8 of 1%. But if we could get back to that 1%, for example, this year

instead of the 7.2, it would be about eight and a half. We're working very hard to do that. You can help. The way you help to get that budget back up is by doing your job well and by making these projects pay. If you stay on schedule, do the work and produce results, it'll make my job ever so much easier.

Overall, I think we'll move into 1984 very, very well. We have, I think, made very great strides in the last two years in bringing the Shuttle and our other major programs along to the point where it looks as though we can bring them in and bring them in according to specifications and show the American people how well we can do it. In our silver anniversary year, it is perhaps a time of retrospection to think of all the magnificent things we've done. And yet, again, peering out into the future and we went back and looked back at some of the predictions that were made 10 or 15 years ago as to where we would be at the current time, and indeed we have done most of things that we were predicting that we would by the early 80's. Those days we worrying about routine access to space, access that would be economical, and enable us to do a lot of new things, a lot of different things. We now have that. We had to struggle in some of those years and we had to worry through a period when the public was not really very interested in us. This agency from the early 70's until now reduced its employment by almost 25%. That hurt. We now have an agreement with this administration and the OMB that we can hold our employment stable, and I believe that in doing that, we will start to be able to bring in some of

the young people, some of the "fresh outs" that we have been sadly missing in several of the last ten, and that's terribly important that we bring in new blood from our universities and start them on their way through a career in NASA. We did very well this year and I hope we will continue that, continue to bring several hundred aboard the agency each year. We're getting a little long in the tooth, in this agency. As a matter of fact, if you look at the statistics of the last several years, we have been growing old in average age almost a year each year, and that's a sure sign of a dying organization. We've got to start bringing fresh blood in and reducing that average age a little bit as we go out, and that shouldn't be too difficult because we are getting old and there will be a fair number of retirements in the future, even with a stable employment at 21,000 in the agency, we should start to see the average age declining as our retirements increase and as the input at the bottom increases. You all will have to work at that very hard too because it's important that not only we hire them but that we bring them in and train them and get them started well. And I know you all take that charge very seriously. It is, perhaps, the most important thing we have to do.

We're working very hard to get a space station initiated and I think that will be important to whole agency, it'll be important to this Center because the technology that will be required to develop that will be spread broadly through the NASA organization. I think we have a good chance of getting that

initiated within the next year or two. And as I said, we have quite alot of commercial interest in that program.

Once we get a space station, and we're targeting the early 90's, 1991 or 1992, for operational capability for our station, then we can think about marrying an orbital transfer vehicle with it and start to think about routine operations in the geosynchronous orbit, and then perhaps realize Vohn Brahn's great dream of going back with a base on the moon and from that base on the moon, a manned expedition to Mars. I believe that we will be able to accomplish all of those things within the next 25 years so that when we get to our golden aniversary, our 50'th, after the 21'st century arrives, we will look back on the first 25 years as just a beginning. People will at that time continue to ask what are the further goals we will attack and fortunately we're in a business where there is no end. Someone coined the phrase, "The endless frontier," and indeed it is. We go on and on, our search leads from one high point to still another. And all of the programs grow upon each other, and it is a continuum and the program stands together; that is the Space Science, the Manned Program, the Aeronautics Program, and our Applications Program all are part of a single piece. When one does well, they all do well.

And I suspect that 25 years ago, people will still be asking the question that Edward Arlington Robinson asked, "Where was he going, this man against the sky?" You know not, nor do I, but we do know that we're going to continue and as we look forward into the next 25 years, we are looking at a tremendous opportunity.

...try to keep up with what you are doing at home in Lewis, but
As I said earlier, this nation realizes now, I believe, very,
very deeply, that we need to continue to explore at the edge of
technology. That we need to move ahead constantly if we are
going to maintain our competitive edge. That is a great
advantage for us. But we cannot and will not, I trust, rest on
our laurels. It is important that we continue to stimulate our
young people to come into science and engineering as they have
not been in enough numbers in the past ten years. We need to
bring them to the point where they believe as we believe, that
the most important thing this nation has to do if it is to remain
a great nation, is to continue to explore. And so it will be
with NASA as it has been in the last 25 years, it will be an
adventure, an exploration, an adventure into the unknown, and all

of us and all of those young people still to come will be a part
of it and will realize the great thrill and immense satisfaction
from doing those jobs well.

Now I am told that I agreed to take questions. I didn't
know that but I will. Thank you very much. (applause)

AUDIENCE: Good afternoon, sir. Lewis is the last NASA
center to have Federal employees in the fire department. In view
of the upcoming contract . . . (tape inaudible) . . . fire
department service, can you give any insight as to what course
your office is considering?

BEGGS: I try very hard to leave those decisions up to Andy
Stofan. (laughter) No, I do consider that a center issue. We

do try to keep up with what you are doing out here in Lewis, but on that particular issue it's not one that has come to my attention. It might in the future and I don't know where I would stand on it. We are, of course, attempting to do as much contracting out for the service functions as we can so as to concentrate our limited attention on the, our limited manpower in the areas which are most important to this agency which, of course, are high technology research and engineering. And while there are problems and I recognize that there are many problems with initiating a program of contracting out, that is the direction which we're trying to move within the constraints, of course, of all the regulations the Federal government has in hiring and reorganizing. (pause) Yes, sir.

AUDIENCE: (tape inaudible)

BEGGS: Well, we propose doing that. University stores are very important to this agency, they always have been. It's been, I describe it in the same way Jim Webb used to describe it - as a partnership between the government, the universities and industry. And I believe that's what it is. We still spend 2 or 3 hundred million dollars a year with the university community. And it is still, they tell me, the folks I talk to in the university community, it is still a major fund source for graduate student training and, of course, allowing the professors to do the kind of research that they, it's important to them to keep pushing at the edge of the art. This year we did propose a

program, very modest program, of initiating a program with the universities to buy equipment. We were not successful in that. We probably will try in the next budget cycle to do the same thing. The universities have been pushing us quite hard that they need this and obviously they do. It's very hard for them to get the more modern equipment that they need and we would like to do it. Now there is sum of money, I forget how much, in the National Science Foundation for that purpose and that's where the OMB put the money as opposed to giving it to us. Obviously, I think we would be a better place to put it, but that may be a parochial view. The Congress, I think, believes that and I think that they may well take matters in their own hands and put money into our budget as well as some of the other mission agencies which deal with universities and we probably will see that, sometime. There was an attempt to do that this year and I think there might be some money in the budget right now for that purpose. If there is, and we're permitted to spend it, then we'll move out with the program quickly because we do think it's very important. (pause) Yes.

AUDIENCE: (tape inaudible)

BEGGS: I think it's an opportunity for us. If you have reference to the LANSAT and meteorological proposal that's before the Congress, I don't know what the prospects of that are, I haven't taken a recent reading on that. I was in favor of the concept of seeing whether we could find a private enterprise interested in taking over the LANSAT because I think that we

would more likely develop a market if it were in private hands than we will if we leave it in government hands. We do a number of things well in the government, but one thing we don't do very well at all is marketing things. I think we're pretty bad at that, probably because we're too used to buying things instead of selling them. And I think the marketing opportunities, the development of a market for the data from LANSAT would be greatly enhanced if it were in private hands. But how that will go, I don't know. And whether they will succeed in marrying together the LANSAT and the meteorological satellites is an open questions. But it has some merit and I think there's arguments on both sides, obviously. Trying to do both those things is probably harder than doing either one of them, but as I say, I was very much in favor of the LANSAT idea and I would hope that the Congress would move out on that. Of course, that, originally, that was a Congressional initiative, it came out of Jack Smith's, Senator Smith's committee. Matter of fact, they tried to get a bill passed last year which failed. But the bill proposed putting it in private hands and for all the reasons that we know, that is, developing a market, assuring continuity, trying to get someone to operate it in such a way that it becomes a commercial service.

With respect to the other commercialization, initiatives that the Administration has proposed, what we're trying to do is to make it as easy as possible for the private sector to enter in and have access to this agency as well as the other agencies of

the government if there are things that look like they can be commercialized. And as I said in my remarks, it is important to this agency that we get as much of that as possible. We, this is an R&D agency first and an operator third or fourth. We really don't want to be an operator. And the more applications and the more fallout we can get that are picked up by the private sector and operated for profit, the larger our constituency will grow and the more important the agency will become. The activities that we've succeeded in pushing into the private sector in the past have born tremendous amount of success for us and I think it resulted in the program being considered to be one of those Federal programs that really does have a payoff, a return on the investment, if you will. We've done some studies on that ourselves and our, some very good, private econometric firms have felt the return on the NASA investment was in the order of 20 or 30 percent a year, which is a very good return indeed, and I hope that we continue that. As we look back maybe in 25 more years, there will be a whole host of different things that have come out of the program. I mentioned several of the things we're doing aboard the Shuttle. We have a lot of interest now from other people in the materials processing area and the Europeans in particular will be flying a number of experiments on the Space Lab for materials processing area. They're flying a few on this flight. Their Spas 01 platform.

We will do as we always have and that is make available our facilities and our assistance and we will do it on the same financial basis we've done in the past, that is, we'll charge additive costs to our clients and I think that policy has served us well in the past and will serve us well in the future.

(pause) Yes.

AUDIENCE: What's a . . . (tape inaudible) . . . for key work the Department of Energy; in other words, taking over some of its programs in that area?

BEGGS: Well, the policy we're trying to follow there is that we will continue to do energy work for the Department of Energy so long as we can see some meaningful contribution to our program and will not . . . (tape inaudible, end of tape)